

IOS Controller

Logic Diagrams

PROPRIETARY NOTICE

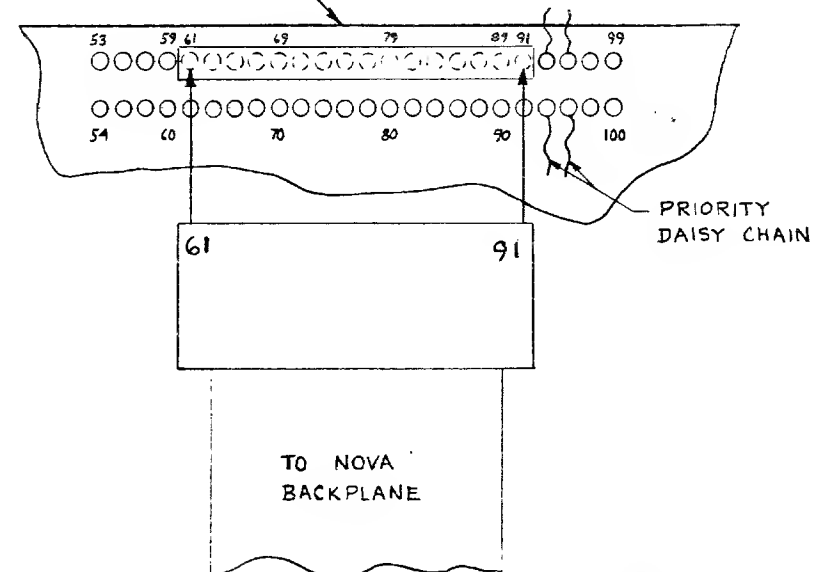
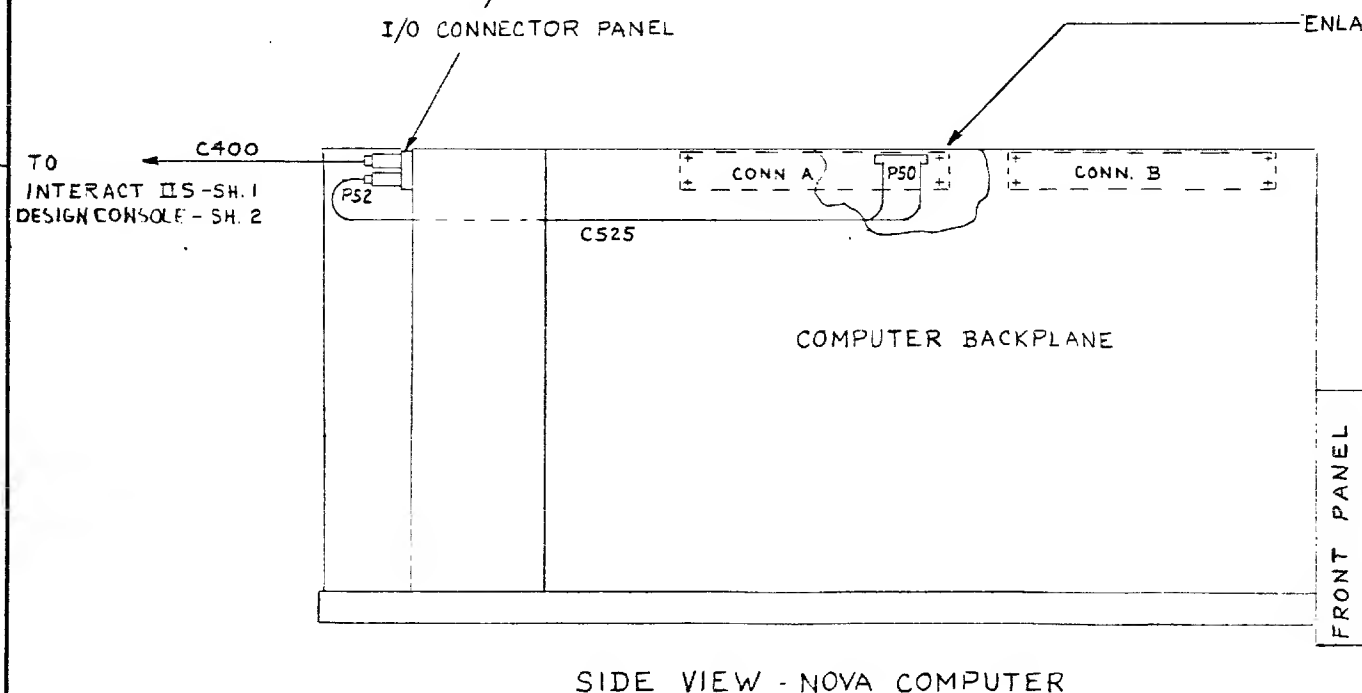
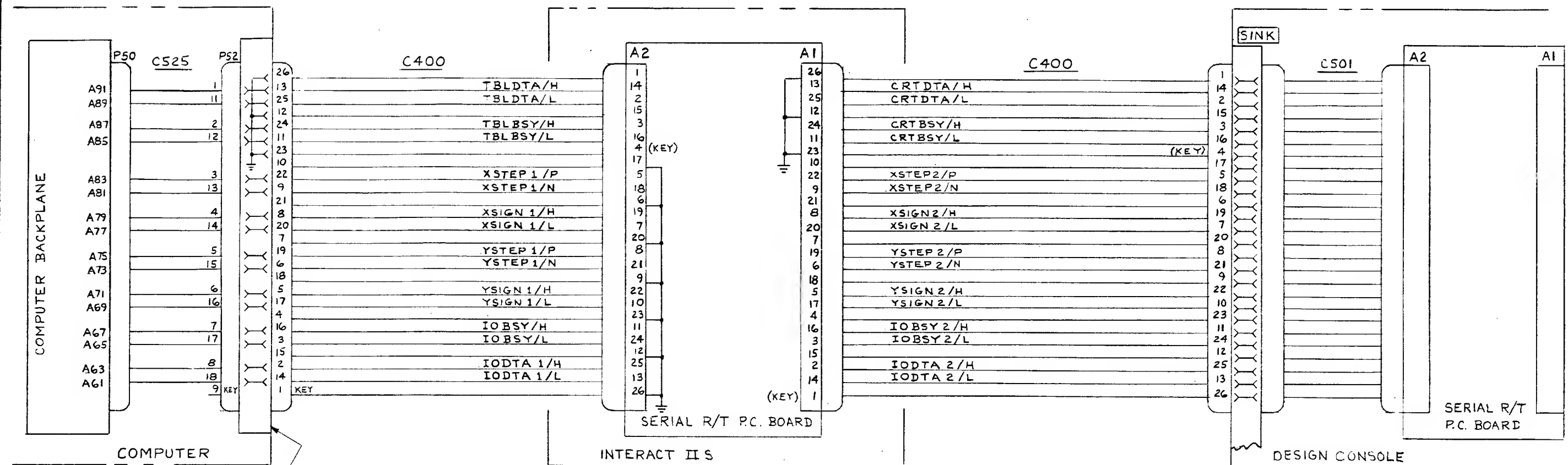
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COMPUTERVISION CORP

[REDACTED]-L14X1020	
PART NUMBER	RE

MACHINE IOS
USED ON CONTROLLER TITLE ELECTRONIC DOCUMENTATION PKG
ORIGINATOR R. Cheatham 8-29-73 NEXT ASBY MOD. LIST QTY -
DATE 1 SHEET 1 OF 1 SHEET

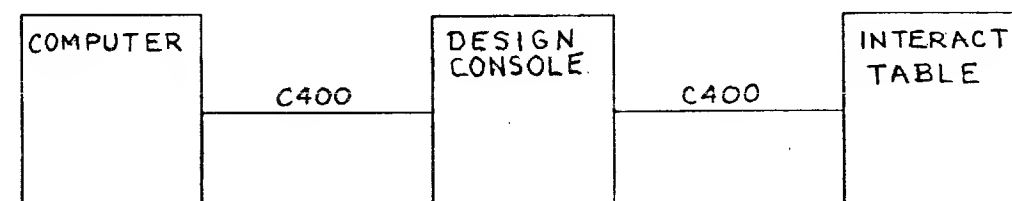
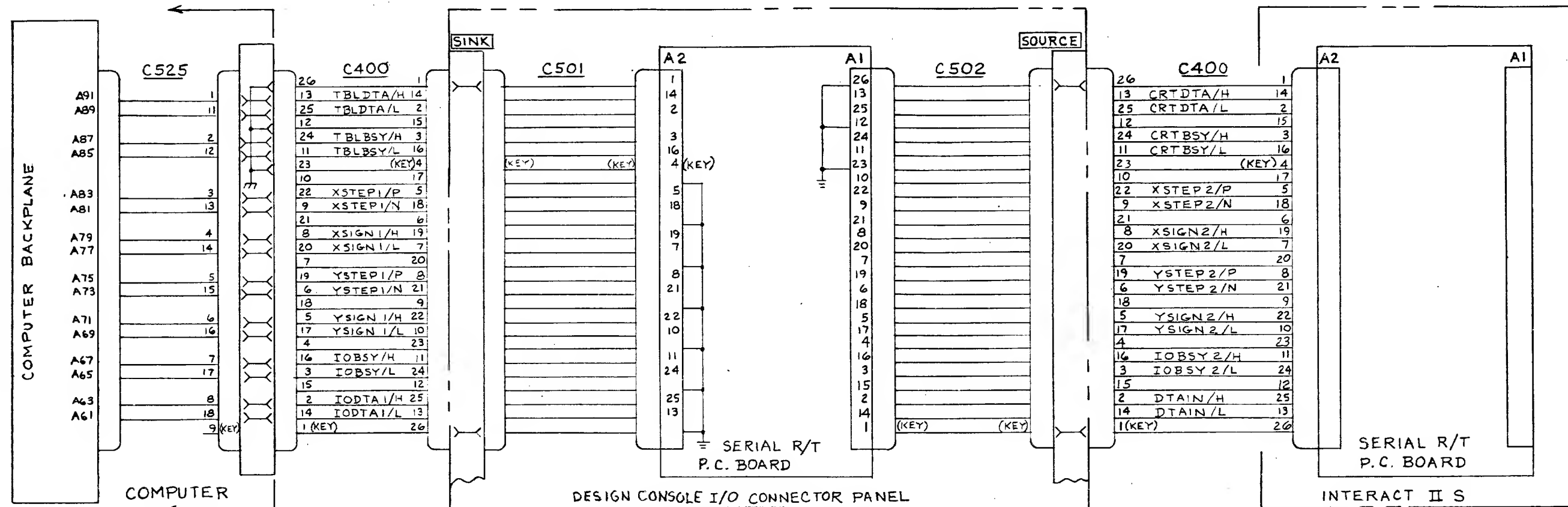
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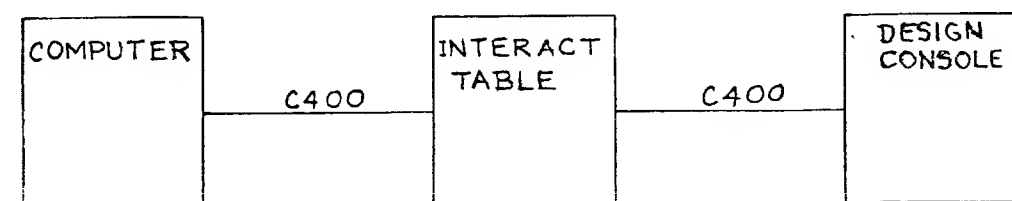
INTERCONNECTION ORDER
INTERACTIVE CONTROLLER
INTERACT IIS TABLE
DESIGN CONSOLE

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISSION OF COMPUTERVISION CORPORATION.		TOLERANCES DECIMAL XX = ± .01 XXX = ± .005 XXXX = ± .0010 FRACTIONAL = ± 1/64 ANGULAR = ± 1°00'		A REL ECO*1273		REV. #03	
MATERIAL		DWN R J C		SYM		REVISION DESCRIPTION	
FINISH		CHK SPINELLI		DATE		APPRO. DATE	
PART NUMBER		L14X1020		QTY		SCALE	
NEXT ASSEMBLY		1		UNIT		DWS NO. DS14E1015	
SIGNATURE		DATE		SCALE		UNIT	
REMOVE ALL SHARPS AND SHARP EDGES		UNIT		SCALE		SHEET 1 OF 2 SHEETS	

DS14E1015
A



BLOCK DIAGRAM - ABOVE



BLOCK DIAGRAM - SEE SHEET 1

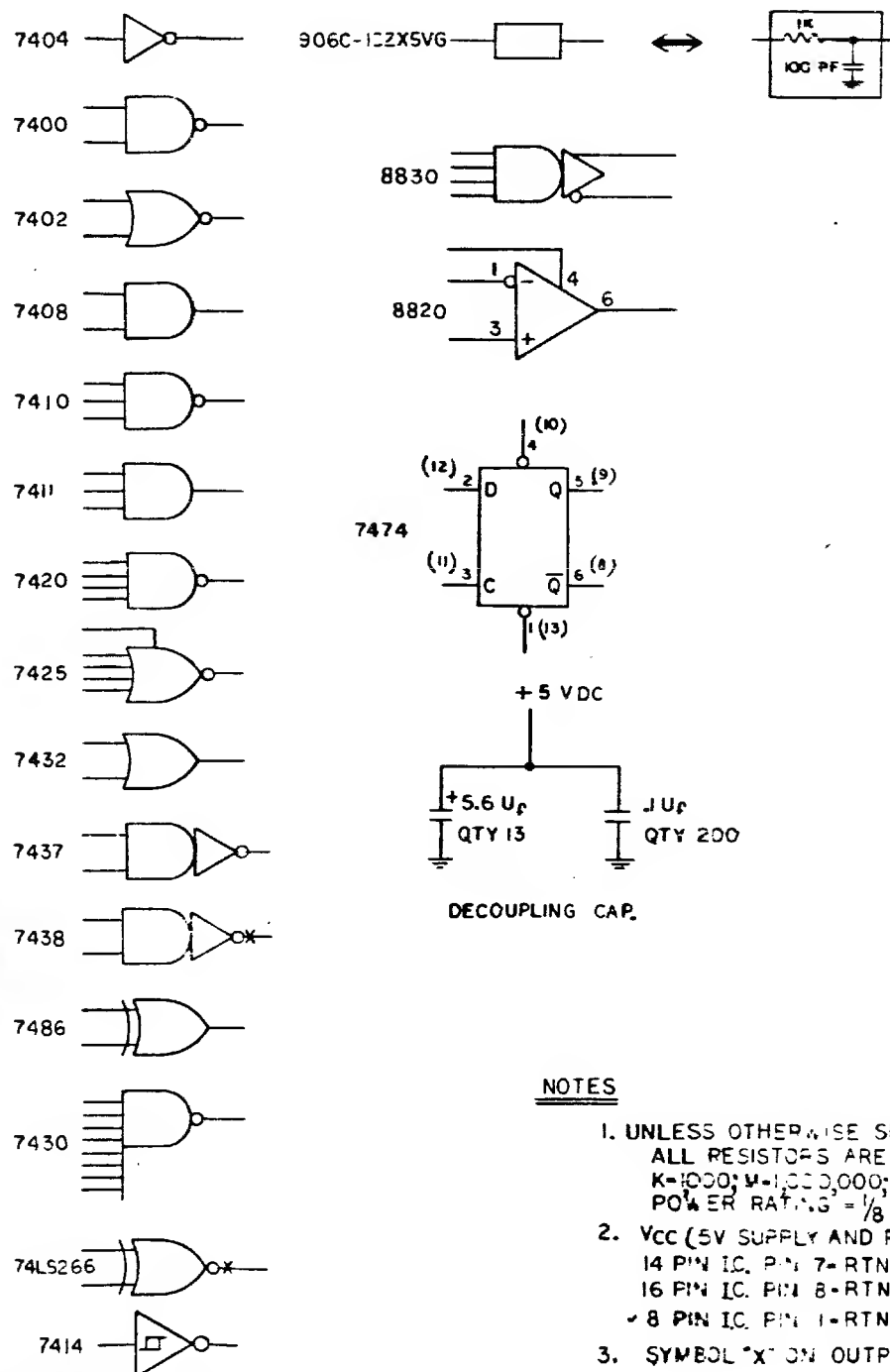
INTERCONNECTION ORDER
INTERACTIVE CONTROLLER
DESIGN CONSOLE
INTERACT II S TABLE

DSI4E1015
A

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTATION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMIT OF COMPUTATION CORPORATION		TOLERANCES DECIMAL XX ± .01 XXX ± .005 XXXX ± .010 FRACTIONAL ± .0064 ANGULAR ± 10'			
MATERIAL		DRN		SYN	REVISION DESCRIPTION
FINISH		CHK		ENR	
		PRG		WFG	
PART NUMBER	SEE SMT ONE	NEXT ASSEMBLY	DATE	SIGNATURE	SCALE
COMPUTATION CORP. SOUTH AVENUE BURLINGTON, MASS. 01803			TITLE INTERCONNECTION IA IS & DESIGN CONSOLE		
REMOVE ALL BURRS AND SHARP EDGES			UNIT WT.		
			SHEET 2 OF 2 SHEETS		

PAGE 6 EDGE CONNECTOR INTERCONNECTION SYMBOLOLOGY

- SIGNAL GOES TO ANOTHER PAGE
- SIGNAL GOES TO ANOTHER PAGE & IS USED ON PRESENT PAGE
- SIGNAL GOES TO EDGE CONNECTOR
- SIGNAL ORIGINATED ON PAGE XX
- SIGNAL ORIGINATED ON PAGE XX & HAS MULTIPLE ENTRY ON THE SAME PAGE
- SIGNAL ORIGINATED ON EDGE CONNECTOR
- BIDIRECTIONAL BUS ON EDGE CONNECTOR

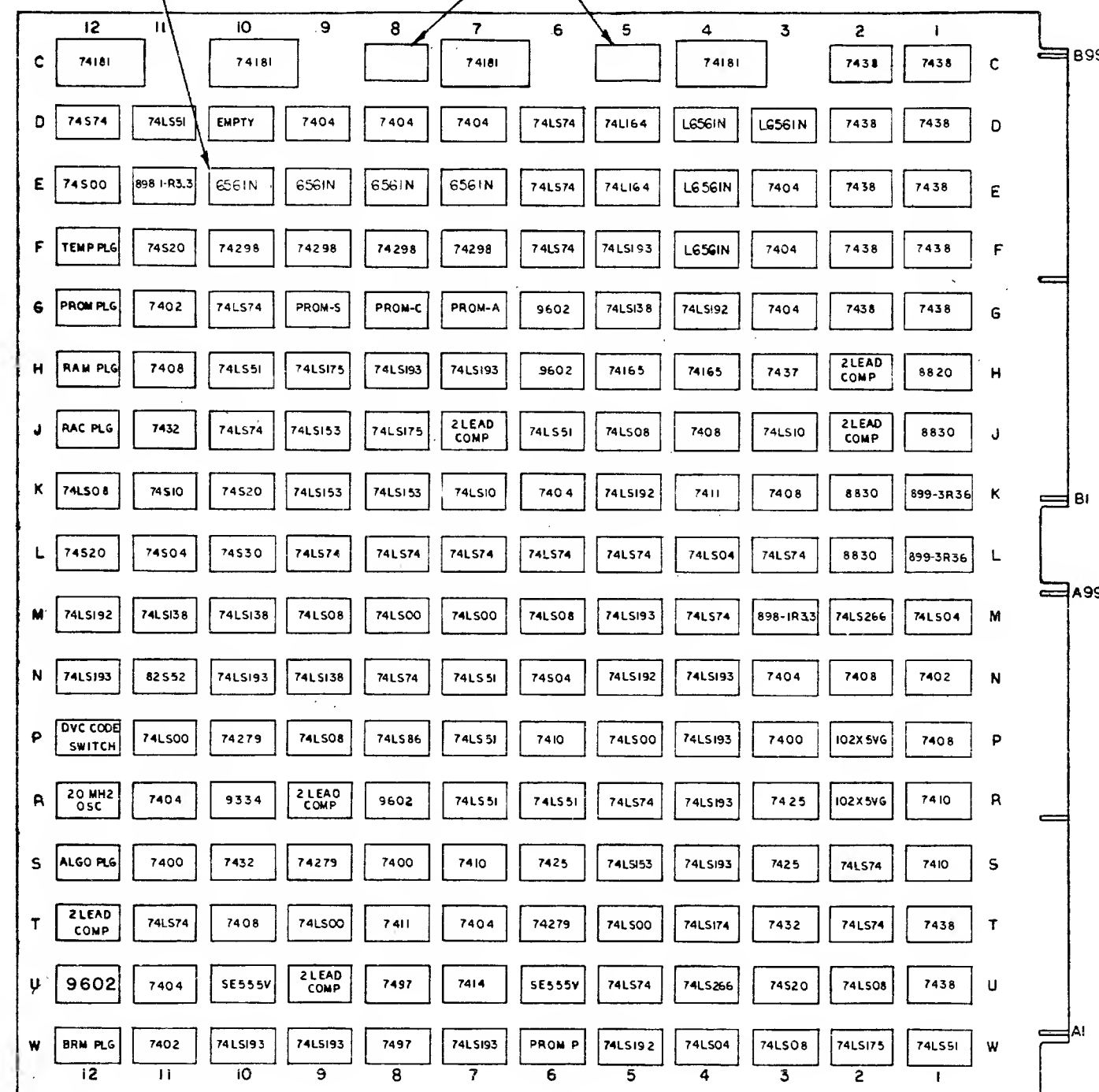


NOTES

- UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS ARE IN OHM
K=1,000; M=1,000,000; TOL. \pm 5%
POWER RATINGS = 1/8 WATT
- VCC (5V SUPPLY AND RTN) TO EACH IC AS FOLLOWS:
14 PIN IC. PIN 7-RTN; PIN 14-SUPPLY
16 PIN IC. PIN 8-RTN; PIN 16-SUPPLY
8 PIN IC. PIN 1-RTN; PIN 8-SUPPLY
- SYMBOL "X" ON OUTPUT PIN INDICATES OPEN COLLECTOR.

THE COMPONENT DM8599 MAY BE USED AS AN
ALTERNATE IN LOCATIONS 7E, 8E, 9E & 10E.
(SEE SHEET 11)

INSERT RESISTOR PAK 898-1-R3.3 ONLY WHEN THE
COMPONENT AM3101 IS USED AS AN ALTERNATE IN
LOCATIONS 3D, 4D, 4E & 4F
(SEE SHEET 5)



COMPONENT LAYOUT & LOGIC SYMBOLOLOGY

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISSION OF COMPUTERVISION CORPORATION.

MATERIAL: NONE

PROJ: NONE

PART NUMBER: EAI4E1002

NEXT ASSEMBLY: L14X1020

QTY: 1

COMPUTERVISION CORR.
SOUTH AVENUE
BURLINGTON, MASS. 01803

TOLERANCES:
XX DECIMAL
XXX .01
XXXX .005
XXXXX .0010
FRACTIONAL 1/16
ANGULAR .5 100

DRN: F. Ribeiro

CHK: NONE

ENGR: NONE

PROJ: NONE

SCALE: NONE

SIGNATURE: NONE

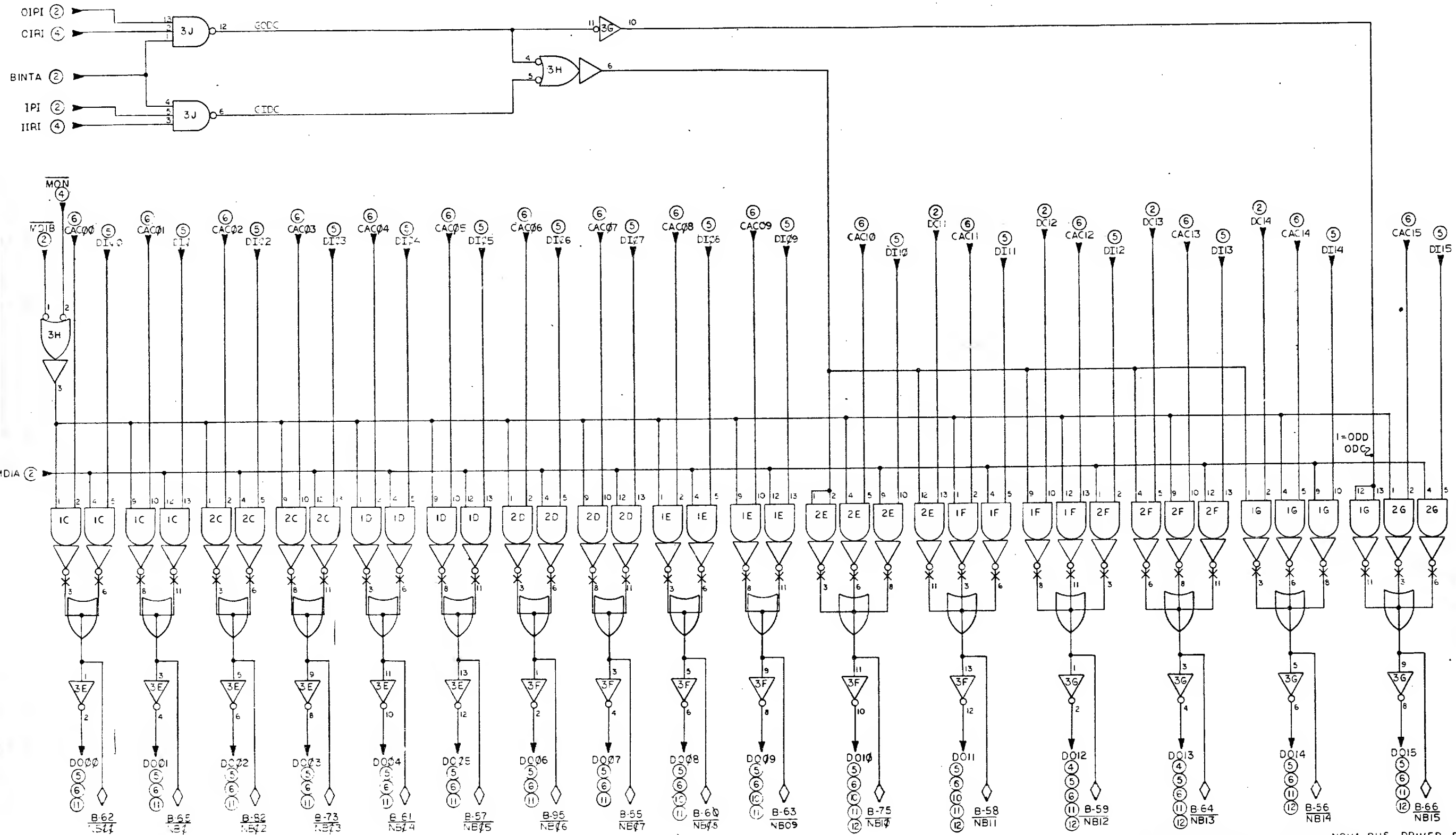
DATE: NONE

REMOVE ALL BURNS AND SHARP EDGES

UNIT: NONE

SHEET 1 OF 13 SHEETS

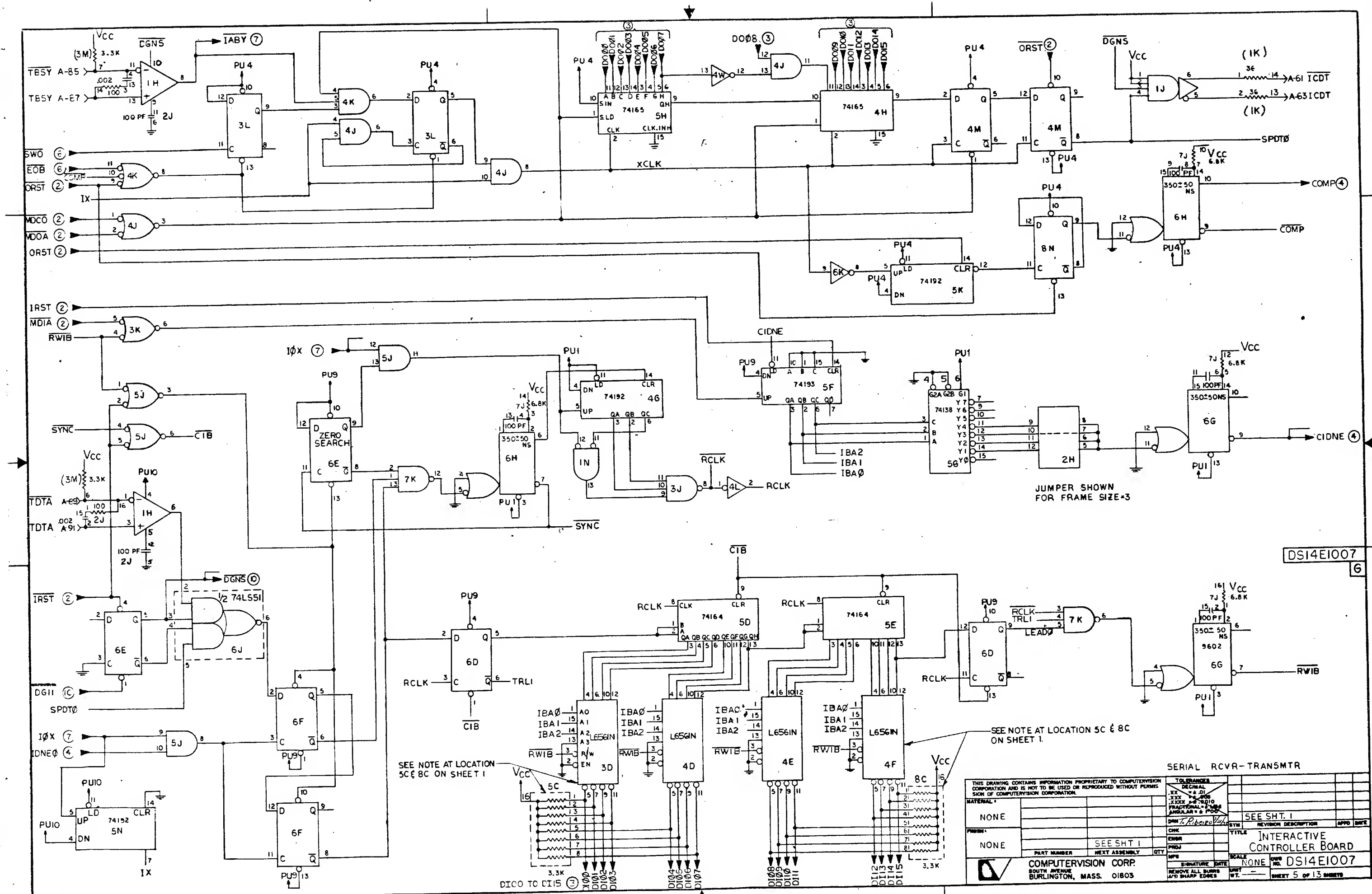
G	ECO#2905	1/24/82
F	ECO#2846	1/24/82
E	ECO#2158	1/24/82
D	ECO#1481	1/24/82
C	ECO#1406	1/24/82
B	ECO#1345	1/24/82
A	REL. ECO#1328	1/24/82
TITLE: INTERACTIVE CONTROLLER BOARD		
DSI4E1007		

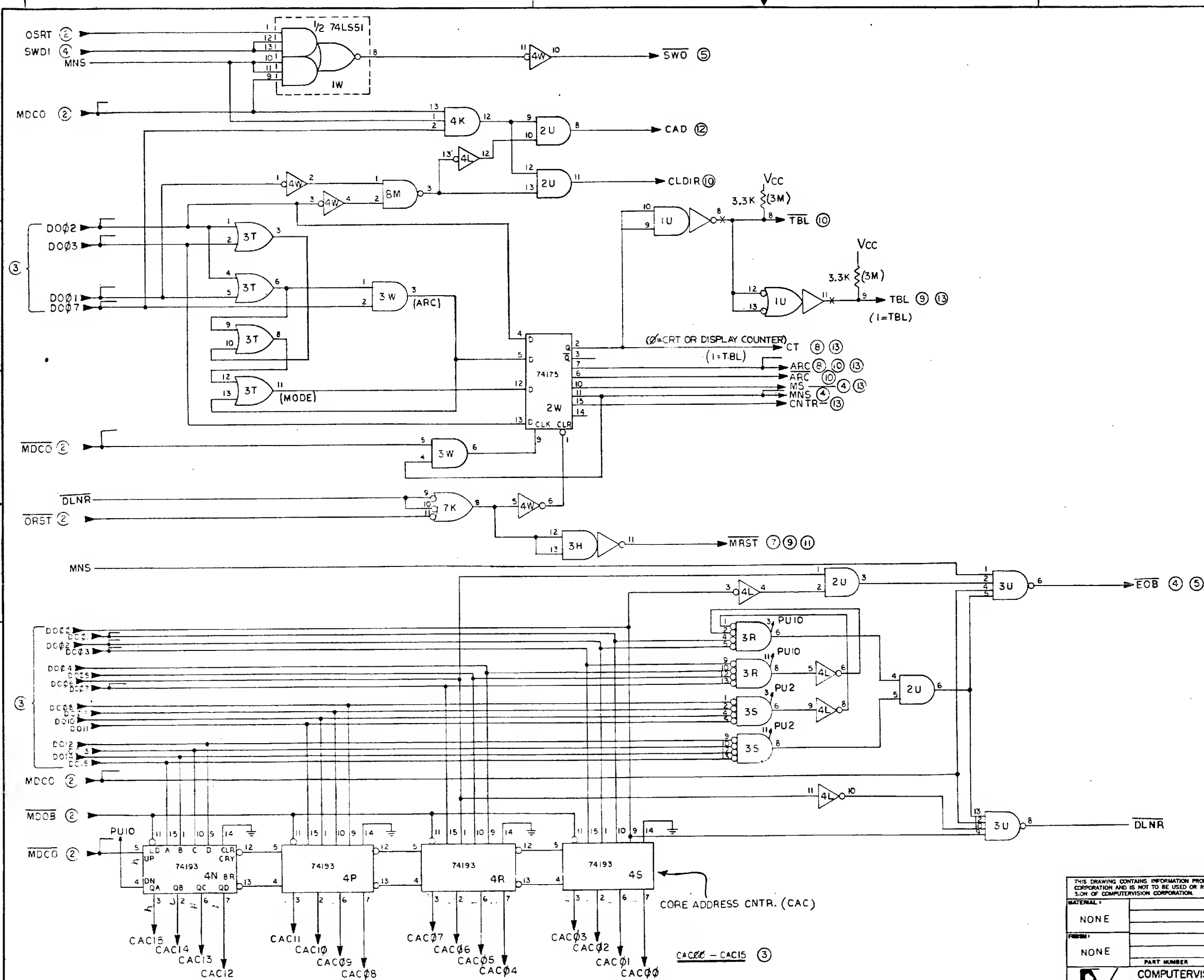


DSI4E1007
6

NOVA BUS DRIVER-RCVR

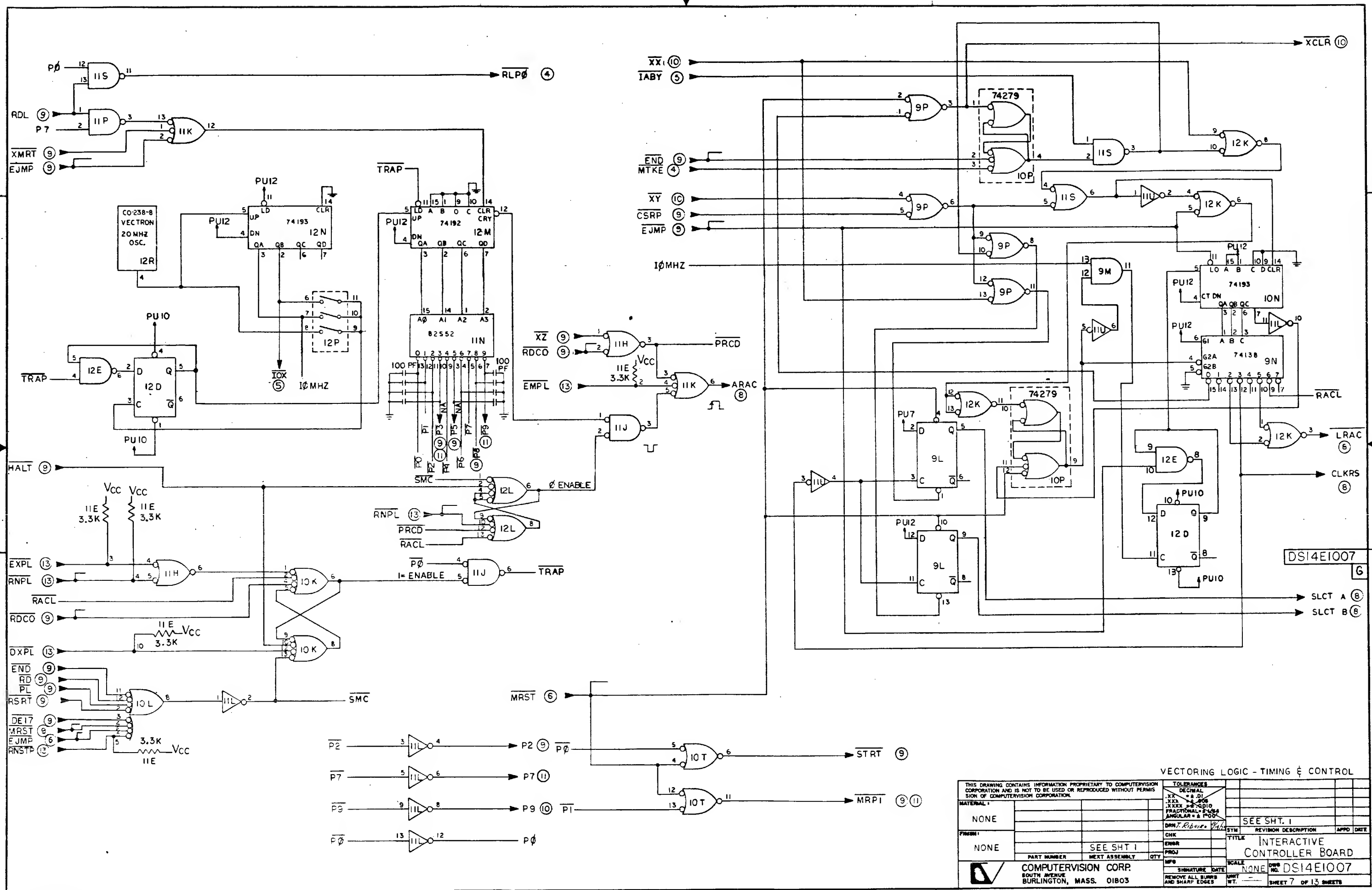
THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISION OF COMPUTERVISION CORPORATION.		TOLERANCES DECIMAL XX .XX ±.01 XXX .XXX ±.005 XXXX .XXX ±.0010 FRACTIONAL ANGULAR ± 5°			
MATERIAL	NONE	SYN	SEE SHT. 1	APPD	DATE
PROJ	NONE	CHK	SEE SHT. 1	ENGR	
PART NUMBER		PROJ			
COMPUTERVISION CORP. SOUTH AVENUE BURLINGTON, MASS. 01803		SCALE NONE		SHEET 3 OF 13 SHEETS	





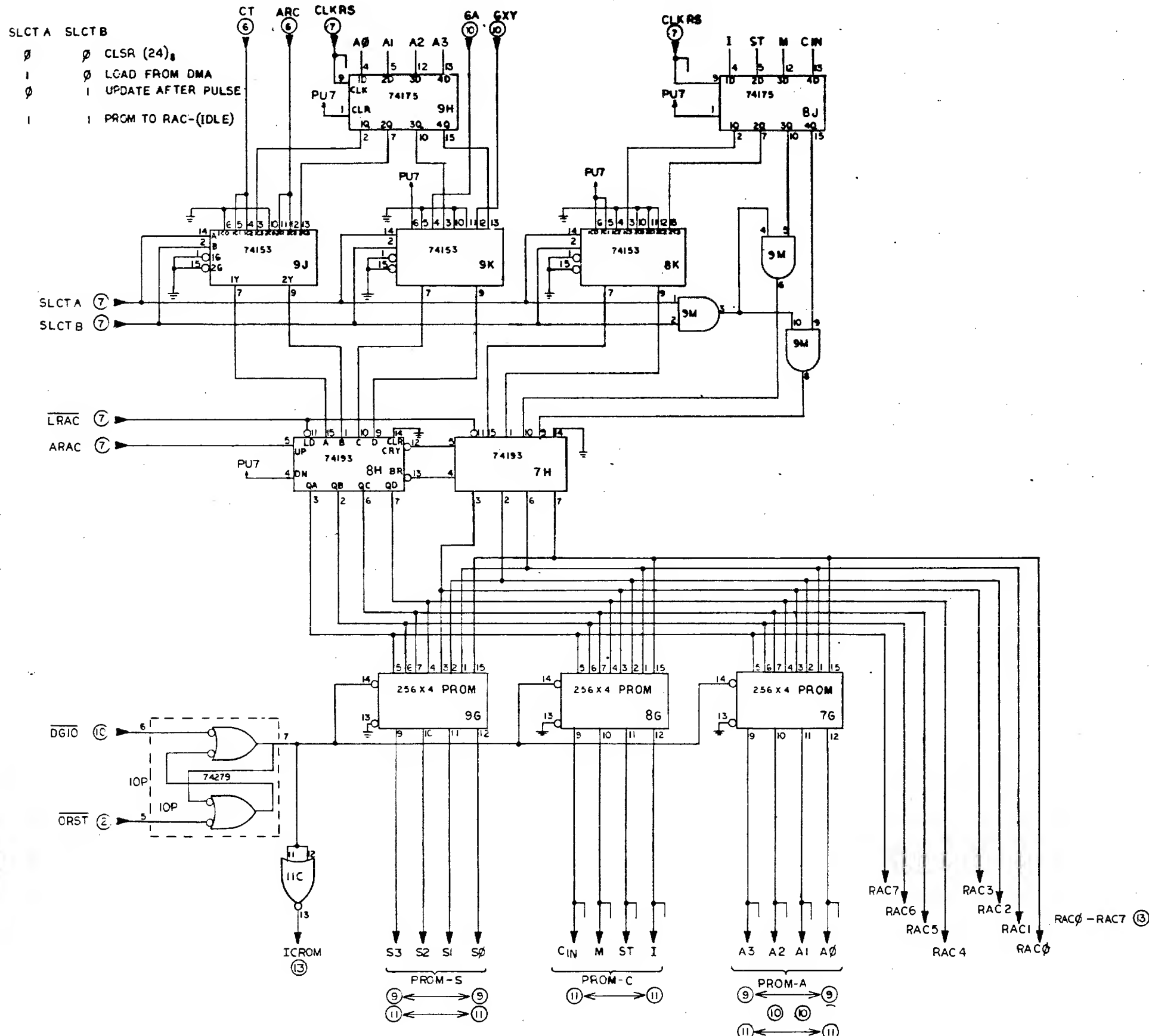
DSI4E1007
6

TOLERANCES				DECIMAL		FRACTIONAL		ANGULAR		SYMBOL		REVISION DESCRIPTION		APPROVAL DATE	
NONE				XX = .01		XXX = .005		XXXX = .0010		SYN		TITLE		INTERACTIVE	
NONE				SEE SHT. 1		SEE SHT. 1		SEE SHT. 1		PART NUMBER		NEXT ASSEMBLY		QTY	
NONE				SEE SHT. 1		SEE SHT. 1		SEE SHT. 1		SIGNATURE		DATE		SCALE	
NONE				SEE SHT. 1		SEE SHT. 1		SEE SHT. 1		UNIT		NONE		DWS NO. DSI4E1007	
NONE				SEE SHT. 1		SEE SHT. 1		SEE SHT. 1		REMOVE ALL BURRS AND SHARP EDGES		SHEET 6 OF 13 SHEETS			



VECTURING LOGIC - TIMING & CONTROL

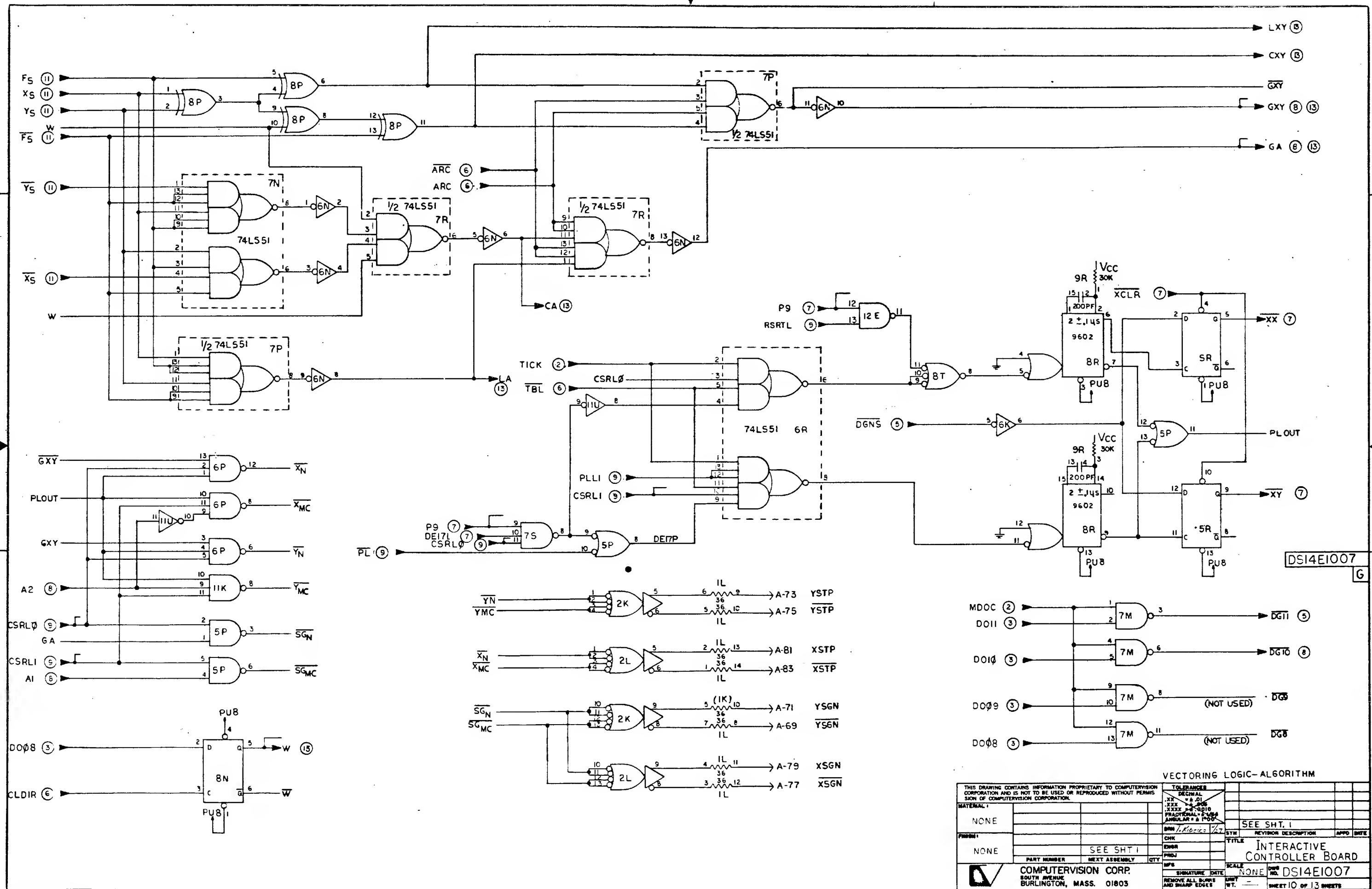
THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISSION OF COMPUTERVISION CORPORATION.				TOLERANCES			
				DECIMAL			
				.XX		±.01	
				.XXX		±.005	
				.XXXX		±.0010	
				FRACTIONAL		±.0004	
				ANGULAR		±.0004	
MATERIAL:				NONE			
FINISH:				NONE			
				PART NUMBER		NEXT ASSEMBLY	
				QTY			
COMPUTERVISION CORP.				SIGNATURE		DATE	
SOUTH AVENUE				REMOVE ALL BURRS		WRT	
BURLINGTON, MASS. 01803				AND SHARP EDGES		SHEET 7 OF 13 SHEETS	

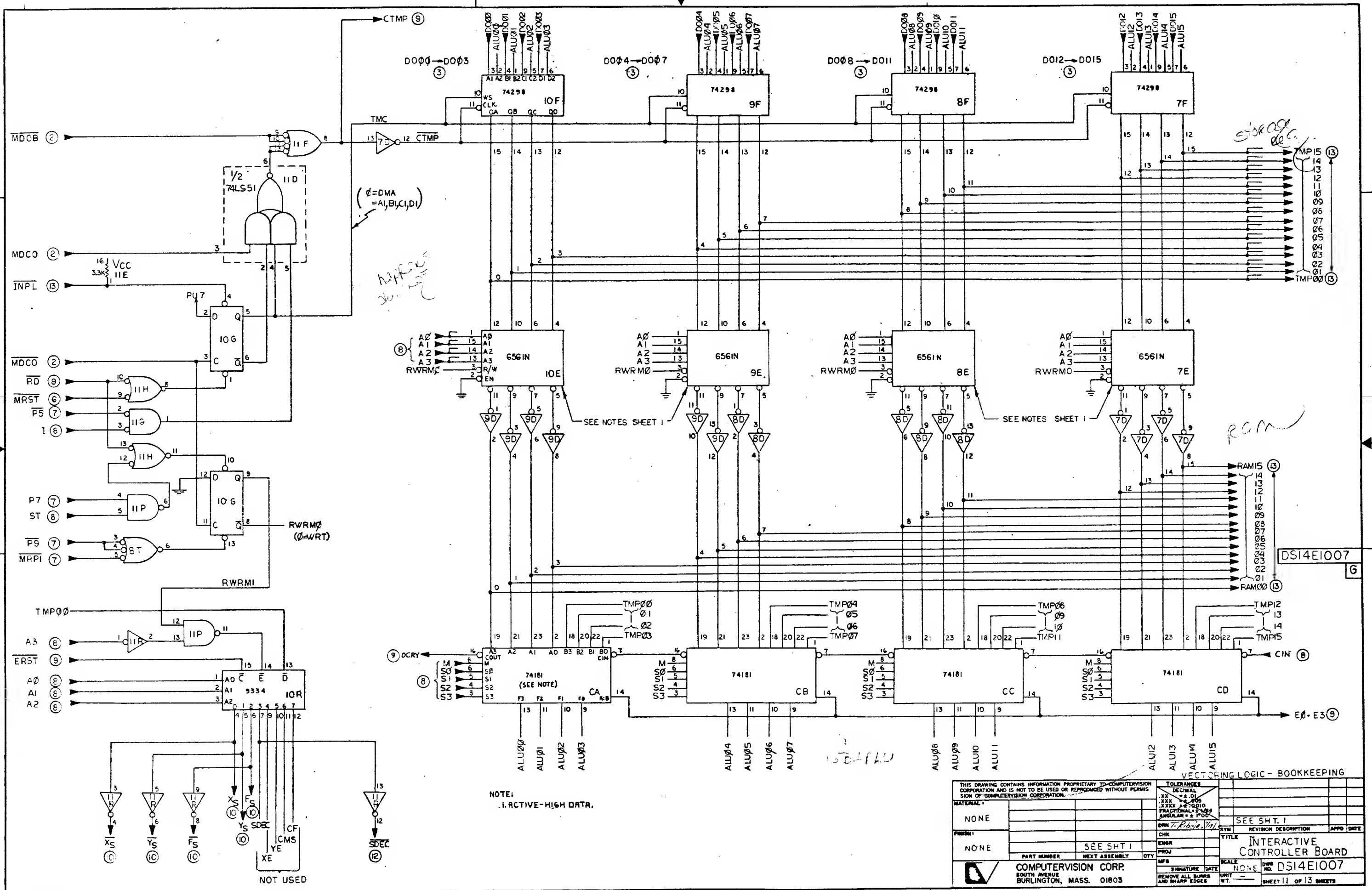


DS14E1007
8

VECTURING PROM & PROGRAM CONTROL

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISS				TOLERANCES DIMENSIONAL FRACTIONAL DECIMAL ANGULAR				SEE SHT. 1			
MATERIAL				FINISH				SYN			
NONE				NONE				REVISION DESCRIPTION			
PART NUMBER				NEXT ASSEMBLY				QTY			
COMPUTERVISION CORP.				BURLINGTON, MASS. 01803				TITLE			
SCALE				DWN				INTERACTIVE CONTROLLER BOARD			
REMOVE ALL BURNS AND SHARP EDGES				SIGNATURE				DATE			
WGT.				NONE				DWN NO. DS14E1007			
								SHEET 8 OF 13 SHEETS			





NOTE:
1. ACTIVE-HIGH DATA.

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISSION OF COMPUTERVISION CORPORATION.			
MATERIAL:	NONE	DECIMAL	XX .XX ±.01
FINISH:	NONE	FRACTIONAL	.XXXX ±.0010
		ANGULAR	±.004
			±.004
REV	1	REV	1
CHK		CHK	
ENGR		ENGR	
PROJ		PROJ	
DATE		DATE	
COMPUTERVISION CORP. SOUTH AVENUE BURLINGTON, MASS. 01803		SCALE: NONE SHEET 11 OF 13 SHEETS	

NOVA WIRING
PIN LIST
NOTATION CONN. A

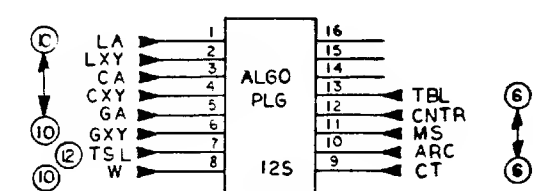
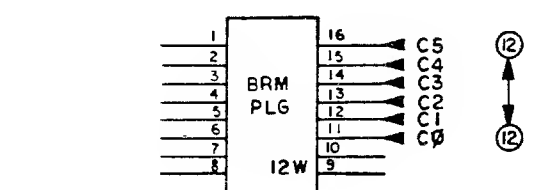
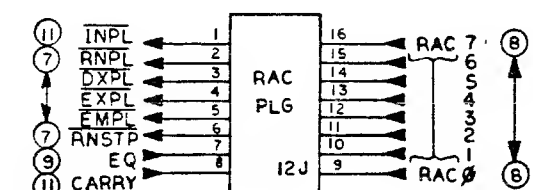
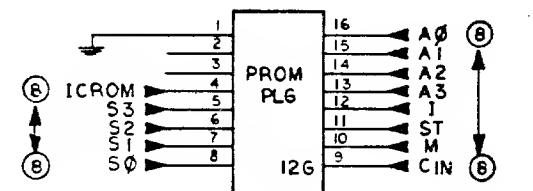
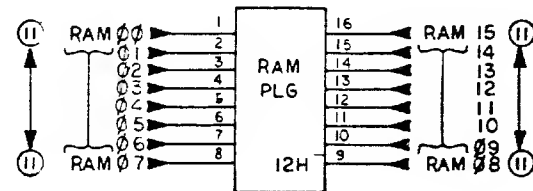
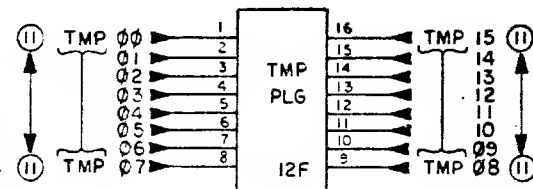
A1	AA1	GRD	A2	AB1	GRD
A3	AA2	+5V	A4	AB2	+5V
A5	AA3		A6	AB3	-5V
A7	AA4		A8	AB4	
A9	AA5		A10	AB5	+VINH
A11	AA6		A12	AB6	
A13	AA7		A14	AB7	
A15	AA8		A16	AB8	
A17	AA9		A18	AB9	
A19	AA10		A20	AB10	
A21	AA11		A22	AB11	
A23	AA12		A24	AB12	
A25	AA13		A26	AB13	
A27	AA14		A28	AB14	
A29	AA15		A30	AB15	
A31	AA16		A32	AB16	
A33	AA17		A34	AB17	GRD
A35	AA18		A36	AB18	
A37	AA19		A38	AB19	MSKO
A39	AA20		A40	AB20	INTA
A41	AA21		A42	AB21	DATIB
A43	AA22		A44	AB22	DATIA
A45	AA23		A46	AB23	SSV
A47	AA24	MCNEI	A48	AB24	DATOC
A49	AA25	CENEI	A50	AB25	CLR
A51	AA26		A52	AB26	STR
A53	AA27		A54	AB27	DATIC
A55	AA28		A56	AB28	DATOB
A57	AA29		A58	AB29	DATOA
A59	AA30		A60	AB30	NCHA
A61	AA31	ICST	A62	AB31	NSZ
A63	AA32	ICST	A64	AB32	NSZ
A65	AA33	ICST	A66	AB33	NSZ
A67	AA34	ICST	A68	AB34	RET
A69	AA35	YSGN	A70	AB35	IORST
A71	AA36	YSGN	A72	AB36	DSZ
A73	AA37	YSTP	A74	AB37	LOPLS
A75	AA38	YSTP	A76	AB38	
A77	AA39	YSGN	A78	AB39	
A79	AA40	XSIN	A80	AB40	SEIF
A81	AA41	YSTP	A82	AB41	SEIF
A83	AA42	YSTP	A84	AB42	
A85	AA43	TRSY	A86	AB43	
A87	AA44	TRSY	A88	AB44	
A89	AA45	TRSY	A90	AB45	
A91	AA46	TOA	A92	AB46	VDM
A93	AA47	ICST	A94	AB47	DCPHIN
A95	AA48	ICST	A96	AB48	INTBIN
A97	AA49	+5V	A98	AB49	+5V
A99	AA50	GRD	A100	AB50	GRD

SEE NOTE 1

SEE NOTE 2

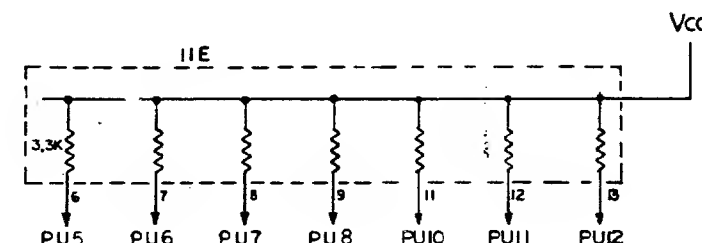
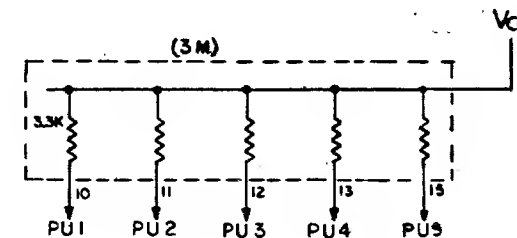
CONN. B

B1	BA1	GRD	B2	BB1	GRD
B3	BA2	+5V	B4	BB2	+5V
B5	BA3		B6	BB3	
B7	BA4		B8	BB4	
B9	BA5		B10	BB5	
B11	BA6		B12	BB6	
B13	BA7		B14	BB7	
B15	BA8		B16	BB8	
B17	BA9	CHMZ	B18	BB9	
B19	BA10		B20	BB10	
B21	BA11	DCHM	B22	BB11	
B23	BA12		B24	BB12	
B25	BA13		B26	BB13	
B27	BA14		B28	BB14	
B29	BA15	INTB	B30	BB15	
B31	BA16		B32	BB16	
B33	BA17	DCHO	B34	BB17	
B35	BA18	DC-E	B36	BB18	
B37	BA19	DCH	B38	BB19	
B39	BA20	CVFLO	B40	BB20	
B41	BA21	ES-E	B42	BB21	
B43	BA22		B44	BB22	
B45	BA23		B46	BB23	+VINH
B47	BA24		B48	BB24	
B49	BA25	CBST	B50	BB25	GRD
B51	BA26		B52	BB26	
B53	BA27		B54	BB27	
B55	BA28	DATA7	B56	BB28	DATA14
B57	BA29	DATA8	B58	BB29	DATA11
B59	BA30	DATA9	B60	BB30	DATA8
B61	BA31	DATA10	B62	BB31	DATA12
B63	BA32	DATA11	B64	BB32	DATA13
B65	BA33	DATA12	B66	BB33	DATA13
B67	BA34		B68	BB34	
B69	BA35		B70	BB35	
B71	BA36		B72	BB36	
B73	BA37	DATA13	B74	BB37	
B75	BA38	DATA14	B76	BB38	
B77	BA39		B78	BB39	
B79	BA40		B80	BB40	
B81	BA41	+5V	B82	BB41	DATA2
B83	BA42		B84	BB42	+VINH
B85	BA43		B86	BB43	
B87	BA44		B88	BB44	
B89	BA45		B90	BB45	
B91	BA46		B92	BB46	
B93	BA47		B94	BB47	
B95	BA48	DATA15	B96	BB48	
B97	BA49	+5V	B98	BB49	+5V
B99	BA50	GRD	B100	BB50	GRD



NOTE:

- CROSSHATCHED POSITIONS INDICATE MEMORY SIGNALS.
- CONNECT C525 CABLE TO THESE PINS.



DS14E1007

G

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISS		TOLERANCES			
		DECIMAL			
		.XX ±.01			
		.XXX ±.005			
		.XXXX ±.0010			
		FRACTIONAL ± 1/64			
		ANGULAR ± .000			
MATERIAL		DRW TR. DATE		SYM	
NONE				SEE SHT. 1	
FORM		CHK		REVISION DESCRIPTION	
NONE		ENGR		APPRO DATE	
PART NUMBER		NEXT ASSEMBLY		QTY	
COMPUTERVISION CORP.		SIGNATURE		SCALE	
SOUTH AVENUE		DATE		NONE	
BURLINGTON, MASS. 01803		REMOVE ALL BURS AND SHARP EDGES		PART	
				SHEET 13 OF 13 SHEETS	

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO COMPUTERVISION CORPORATION AND IS NOT TO BE USED OR REPRODUCED WITHOUT PERMISSION OF COMPUTERVISION CORPORATION.

INTERACTIVE CONTROLLER BD.
COMPUTERIZED ALPHA SIGNAL
NAME LIST.

DO NOT MANUFACTURE BY THIS DOCUMENT

SHT	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	Ø											
REV.																	A											
SHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
REV.	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A													

A	REL ECO #1273	H.B.	9/73
SYM	REVISION DESCRIPTION	APPD	DATE

DRN	H.B.	7/3
CHK		
ENGR	H.B.	9/73
PROJ	H.B.	9/73
MFG		

L14X1031	1	
L14X1020	1	
PART NUMBER	NEXT ASSEMBLY	QTY

TITLE	
INTERACTIVE CONTROLLER BD	
ALPHA SIGNAL NAMES	
DWG NO.	AW14E1012
SHEET Ø OF 15 SHEETS	

0001	MAIN		
01			INTERACTIVE CONTROLLER BD.
02			ALPHA SIGNAL NAMES
03			AW14E 1012 REV A
04			
05	00000	000002	GODO: 2. GEN. OUTPUT DEVICE CODE.
06	00001	000003	GIDO: 3. GEN. INPUT DEVICE CODE.
07	00002	000005	NB15: 5. NOVA BUS BIT 15
08	00003	000006	NB14: 6. NOVA BUS BIT 14
09	00004	000007	NB13: 7. NOVA BUS BIT 13
10	00005	000010	NB12: 8. NOVA BUS BIT 12
11	00006	000011	NB11: 9. NOVA BUS BIT 11
12	00007	000012	NB10: 10. NOVA BUS BIT 10
13	00010	000013	NB09: 11. NOVA BUS BIT 09
14	00011	000014	NB08: 12. NOVA BUS BIT 08
15	00012	000015	NB07: 13. NOVA BUS BIT 07
16	00013	000016	NB06: 14. NOVA BUS BIT 06
17	00014	000017	NB05: 15. NOVA BUS BIT 05
18	00015	000020	NB04: 16. NOVA BUS BIT 04
19	00016	000021	NB03: 17. NOVA BUS BIT 03
20	00017	000022	NB02: 18. NOVA BUS BIT 02
21	00020	000023	NB01: 19. NOVA BUS BIT 01
22	00021	000024	NB00: 20. NOVA BUS BIT 00
23	00022	000025	OIPI: 21. OUTPUT INTERRUPT PRIORITY IN.
24	00023	000026	SINTA: 22. BUFFERED INTERRUPT ACKNOWLEDGE (INTA)
25	00024	000027	OIR1: 23. OUTPUT INTERRUPT REQUEST (1).
26	00025	000030	IPI: 24. INPUT INTERRUPT PRIORITY IN.
27	00026	000031	IIR1: 25. INPUT INTERRUPT REQUEST (1).
28	00027	000032	MDIB: 26. MY DATA IN B. PUTS CORE ADDRESS COUNTER ON THE BUS.
29			
30	00030	000033	MON: 27. MEMORY ON. PUTS CORE ADDRESS COUNTER ON THE BUS DURING DMA OF.
31			
32	00031	000034	MDIA: 28. MY DATA IN A. PUTS INTERACT DATA ON THE BUS.
33	00032	000035	DO00: 29. DATA OUT. RCVD DATA FROM CPU. BUFFERED AND INVERTED.
34			
35	00033	000036	DO01: 30.
36	00034	000037	DO02: 31.
37	00035	000040	DO03: 32.
38	00036	000041	DO04: 33.
39	00037	000042	DO05: 34.
40	00040	000043	DO06: 35.
41	00041	000044	DO07: 36.
42	00042	000045	DO08: 37.
43	00043	000046	DO09: 38.
44	00044	000047	DO10: 39.
45	00045	000050	DO11: 40.
46	00046	000051	DO12: 41.
47	00047	000052	DO13: 42.
48	00050	000053	DO14: 43.
49	00051	000054	DO15: 44. DATA OUT.
50	00052	000055	DO11: 45. DEVICE CODE.
51	00053	000056	DO12: 46.
52	00054	000057	DO13: 47.
53	00055	000060	DO14: 48.
54	00056	000061	CAC00: 49. CORE ADDRESS COUNTER (CAC) MSB.
55	00057	000062	CAC01: 50.
56	00060	000063	CAC02: 51.
57	00061	000064	CAC03: 52.
58	00062	000065	CAC04: 53.
59	00063	000066	CAC05: 54.

0002	MAIN		
01	00064	000067	CAC06: 55.
02	00065	000070	CAC07: 56.
03	00066	000071	CAC08: 57.
04	00067	000072	CAC09: 58.
05	00070	000073	CAC10: 59.
06	00071	000074	CAC11: 60.
07	00072	000075	CAC12: 61.
08	00073	000076	CAC13: 62.
09	00074	000077	CAC14: 63.
10	00075	000100	CAC15: 64.
11	00076	000101	DI00: 65.
12	00077	000102	DI01: 66.
13	00100	000103	DI02: 67.
14	00101	000104	DI03: 68.
15	00102	000105	DI04: 69.
16	00103	000106	DI05: 70.
17	00104	000107	DI06: 71.
18	00105	000110	DI07: 72.
19	00106	000111	DI08: 73.
20	00107	000112	DI09: 74.
21	00110	000113	DI10: 75.
22	00111	000114	DI11: 76.
23	00112	000115	DI12: 77.
24	00113	000116	DI13: 78.
25	00114	000117	DI14: 79.
26	00115	000120	DI15: 80.
27	00116	000121	ROEN: 81.
28	00117	000123	MSKO: 83.
29	00120	000125	DCHA: 85.
30			SIGNAL.
31	00121	000127	INTAX: 87.
32			SIGNAL: (INTA)
33	00122	000131	IORT: 89.
34	00123	000133	STRT: 91.
35	00124	000135	CLR: 93.
36	00125	000137	DATIA: 95.
37			READING DATA.
38	00126	000141	DATIB: 97.
39			READING CAC.
40	00127	000143	DATOA: 99.
41			SINGLE CHARACTER OUTPUT.
42	00130	000145	DATOB: 101.
43			SETTING CAC.
44	00131	000147	DATOC: 103.
45			DIAG.
46	00132	000151	IP1: 105.
47	00133	000152	DCP1: 106.
48			SIGNAL.
49	00134	000153	DCHO: 107.
50	00135	000155	DS0: 109.
51	00136	000156	DS1: 110.
52	00137	000157	DS2: 111.
53	00140	000160	DS3: 112.
54	00141	000161	DS4: 113.
55	00142	000162	DS5: 114.
56	00143	000163	IPO: 115.
57	00144	000164	DCPO: 116.
58	00145	000202	BR0EN: 130.
59	00146	000203	BMSKO: 131.

CORE ADDRESS COUNTER. LSB.
 DATA IN. RCVD INTERACT DATA. MSB.

DATA IN. LSB.
 REQUEST ENABLE CPU GENERATED SIGNAL (ROENB)
 MASK OUT. CPU GENERATED SIGNAL.
 DATA CHANNEL ACKNOWLEDGE. CPU GENERATED
 SIGNAL.
 INTERRUPT ACKNOWLEDGE. CPU GENERATED
 SIGNAL: (INTA)
 I/ORT. CPU GENERATED SIGNAL.
 START. CPU GENERATED SIGNAL.
 CLEAR. CPU GENERATED SIGNAL.
 DATA INPUT A. CPU GENERATED SIGNAL USED FOR
 READING DATA.
 DATA INPUT B. CPU GENERATED SIGNAL USED FOR
 READING CAC.
 DATA OUTPUT A. CPU GENERATED SIGNAL. USED FOR
 SINGLE CHARACTER OUTPUT.
 DATA OUTPUT B. CPU GENERATED SIGNAL. USED FOR
 SETTING CAC.
 DATA OUTPUT C. CPU GENERATED SIGNAL. USED FOR
 DIAG.
 INTERRUPT PRIORITY IN. CPU GENERATED SIGNAL.
 DATA CHANNEL PRIORITY IN. CPU GENERATED
 SIGNAL.
 DATA CHANNEL OUT. CPU GENERATED SIGNAL
 DEVICE SELECT. CPU GENERATED SIGNAL. MSB.

DEVICE SELECT. LSB.
 INTERRUPT PRIORITY OUT.
 DATA CHANNEL PRIORITY OUT.
 BUFFERED REQ. ENABLE.
 BUFFERED MSKO.

	0000	MAIN			
01	00147	000204	BDCHA.	132	. BUFFERED DCHA.
	00150	000205	ORST.	133	. OUTPUT RESET.
	00151	000206	GRST.	134	. GENERAL RESET. BUFFERED IORST.
04	00152	000207	IRST.	135	. INPUT RESET.
05	00153	000210	IRST.	136	
06	00154	000211	OSRT.	137	. OUTPUT START.
07	00155	000212	OSRT.	138	
08	00156	000213	ICLR.	139	. INPUT CLR.
09	00157	000214	OCLR.	140	. OUTPUT CLR.
10	00160	000215	MDIA.	141	. MY DATA INPUT A. DATIA WITH DEVICE CODE
11	00161	000216	MDOA.	142	. MY DATA OUTPUT A. DATORA WITH DEVICE CODE.
12	00162	000217	MDOB.	143	. MY DATA OUTPUT B. DATOB WITH DEVICE CODE.
13	00163	000220	MDOC.	144	. MY DATA OUTPUT C. DATOC WITH DEVICE CODE.
14	00164	000221	IIR0.	145	. INPUT INTERRUPT REQ (0).
15	00165	000222	OIP0.	146	. OUTPUT INTERRUPT REQ (0).
16	00166	000223	DCHRO.	147	. DATA CHANNEL REQ (0).
17	00167	000224	DCHS1.	148	. DATA CHANNEL SYNC (1).
18	00170	000225	DCPI.	149	. DATA CHANNEL PRIORITY IN: BUFFERED DAISY
19					. CHAIN INPUT.
20	00171	000226	MDCO.	150	. MY DATA CHANNEL OUT.
21	00172	000227	MDCO.	151	
22	00173	000230	DIDC.	152	. DECODED INPUT DEVICE CODE
23	00174	000231	DOOC.	153	. DECODED OUTPUT DEVICE CODE.
24	00175	000232	RWIB.	155	. R/W INPUT BUFFER. XFERS INTERACT DATA FROM
25					. SERIAL TO PARALLEL CONVERTER INTO RAM.
26	00176	000236	CIB.	158	. CLR INPUT BUFFER.
27	00177	000237	SYNO.	159	. INDICATES START OF NMITION.
28	00200	000264	ROCK.	180	. RCV CLK.
29	00201	000265	ROCK.	181	
30	00202	000266	TRL1.	182	. TRAIL 1. LAST BIT IN THE RECEIVED WORD.
31					
32	00203	000271	IBAO.	185	. INPUT BUFFER ADDRESS 0.
33	00204	000272	IBA1.	186	. INPUT BUFFER ADDRESS 1
34	00205	000273	IBA2.	187	. INPUT BUFFER ADDRESS 2
35	00206	000314	LEAD0.	204	. FIRST BIT IN THE RECEIVED WORD.
36	00207	000315	IOX.	205	
37	00210	000316	IDNE0.	206	. INPUT DONE. INPUT DONE F/F (0).
38	00211	000317	RODT.	207	. RCV'D DATA. RCV'D FROM IA OR CRT.
39	00212	000320	DGNS.	208	. DIAGNOSTICS XMITER CONN. TO RCVR.
40	00213	000321	CIDNE.	209	. CLK INPUT DONE.
41	00214	000322	DG11.	210	. DGNS10S 11. SIGNAL WHICH CONNECTS
42					. XMITER TO RCVR.
43	00215	000323	SFDT0.	211	. SUPERVISORY DATA. COMMANDS TO IA OR CRT.
44	00216	000324	IDNE1.	212	. INPUT DONE (1).
45	00217	000326	SELD.	214	. SELECT DONE. SEE NOVA INSTRUCTIONS.
46	00220	000327	INTR.	215	. INTERRUPT TO CPU.
47	00221	000330	SELB.	216	
48	00222	000331	ODNE1.	217	. OUTPUT DONE (1).
49	00223	000332	OBSY1.	218	. OUTPUT BUSY (1).
50	00224	000333	NN.	219	. X NORMAL. OUTPUT X PULSE DUE TO ALGORITHM.
51	00225	000334	XMC.	220	. X MC. OUTPUT X PULSE DUE TO MICRO COMPUTER.
52	00226	000335	SGN.	221	
53	00227	000336	SGMC.	222	
54	00230	000337	YN.	223	
	00231	000340	YMC.	224	
	00232	000341	SFDT1.	225	. SUPERVISORY DATA (1).
	00233	000342	TDTA.	226	. TABLE DATA. ON INTERCONNECTION DIAG. THIS
58					. SIGNAL IS TEL DTA/H.
59	00234	000344	TDTA.	228	. ON INTERCONNECTION DIAG. THIS SIGNAL

0001	MAIN		
03	00235 000345 TBSY.	229.	IS TEL DTA/L
04	00236 000347 TBSY.	231.	ON INTERCONNECTION DIAG. THIS
05			SIGNAL IS TEL BSY/L
06	00237 000350 XSTP.	232.	TABLE BUSY ON INTERCONNECTION DIAG.
07			THIS SIGNAL IS TEL BSY/H.
08	00240 000352 XSTP.	234.	ON INTERCONNECTION DIAG. THIS SIGNAL
09			IS XSTEP 1/P.
10	00241 000354 XSGN.	236.	ON INTERCONNECTION DIAG. THIS SIGNAL
11			IS XSTEP 1/N.
12	00242 000356 XSGN.	238.	ON INTERCONNECTION DIAG. THIS SIGNAL
13			IS XSIGN 1/L.
14	00243 000360 YSTP.	240.	ON INTERCONNECTION DIAG. THIS SIGNAL
15			IS XSTEP 1/P.
16	00244 000362 YSTP.	242.	ON INTERCONNECTION DIAG. THIS SIGNAL
17			IS YSTEP 1/N.
18	00245 000364 YSGN.	244.	ON INTERCONNECTION DIAG. THIS SIGNAL
19			IS YSIGN 1/H.
20	00246 000366 YSGN.	246.	ON INTERCONNECTION DIAG. THIS SIGNAL
21			IS YSIGN 1/L.
22	00247 000370 ICDT.	248.	INTERACTIVE CONTROLLER DATA (SUPERVISORY
23			CHANNEL). XX ICDTA 1/L.
24	00250 000372 ICDT.	250.	ON INTERCONNECTION DIAG. THIS SIGNAL
25			IS ICDTA 1/H.
26	00251 000374 ICBY.	252.	ON INTERCONNECTION DIAG. THIS SIGNAL
27			IS IOBSY/L.
28	00252 000376 ICBY.	254.	INTERACTIVE CONTROLLER BUSY. ON INTER-
29			CONNECTION DIAG. THIS SIGNAL IS IOBSY/H.
30	00253 000402 IABY.	258.	IA BUSY.
31	00254 000406 IOMHZ.	262.	
32	00255 000411 DG10.	265.	DIAGNOSTICS 10.
33	00256 000412 DG9.	266.	DIAGNOSTICS 9.
34	00257 000413 DG8.	267.	DIAGNOSTICS 8.
35	00260 000414 IN.	268.	SHIFTING FREQ.
36	00261 000454 MNS.	300.	MODE NOT SET.
37	00262 000455 CT.	301.	ORT OR TEL MODE. 1=TEL.
38	00263 000456 ARC.	302.	ARC MODE SET = 1.
39	00264 000003 MS.	003.	MODE SET.
40	00265 000460 CNTR.	304.	CNTR MODE SET = 1.
41	00266 000461 EOB.	305.	END OF BUFFER.
42	00267 000462 DLNR.	306.	DELIMITER.
43	00270 000463 CNTR.	307.	
44	00271 000464 CAD.	308.	CLK ACC/DEC.
45	00272 000465 CLDIR.	309.	CLK DIRECTION.
46	00273 000466 SWO.	310.	SINGLE WORD OUT.
47	00274 000467 MRST.	311.	MICRO COMPUTER RST. LOGICAL "OR" OF
48			ICRST, ORST AND DLNR.
49	00275 000470 SWD0.	312.	SINGLE WORD F/F (0).
50	00276 000502 DCHR.	322.	
51	00277 000505 COMP.	325.	COMPLETION. INDICATES THAT A WORD OVER
52			SUPERVISORY CHANNEL IS SENT OUT.
53	00300 000506 NVL.	326.	NON VECTORING LOGIC.
54	00301 000510 MTKE.	328.	NO TAKE.
55	00302 000035 CODN0.	029.	CLK OUTPUT DONE
56	00303 000512 SWD1.	330.	SINGLE WORD (1).
57	00304 000513 OMSK0.	331.	OUTPUT MSK0 OUT.
58	00305 000514 XCLK.	332.	XMIT CLK.
59	00306 000533 ORST.	347.	

0005	MAIN		
1	00007	000540	COMP.
2	00010	000541	TBL.
3	00011	000542	TBL.
4	00012	000543	PU1.
5	00013	000544	PU2.
6	00014	000545	PU3.
7	00015	000546	PU4.
8	00016	000613	ICROM.
9	00017	000700	VCC.
10	00020	001015	IMSK0.
11	00021	001114	C0.
12	00022	001115	C1.
13	00023	001116	C2.
14	00024	001117	C3.
15	00025	001120	C4.
16	00026	001121	C5.
17	00027	000547	GND.
18			
19	00030	001515	CTMP.
20	00031	001516	TMC.
21	00032	001517	TMP00.
22	00033	001520	TMP01.
23			
24	00034	001521	TMP02.
25	00035	001522	TMP03.
26	00036	001523	TMP04.
27	00037	001524	TMP05.
28	00040	001525	TMP06.
29	00041	001526	TMP07.
30	00042	001527	TMP08.
31	00042	001530	TMP09.
32	00044	001531	TMP10.
33	00045	001532	TMP11.
34	00046	001533	TMP12.
35	00047	001534	TMP13.
36	00050	001535	TMP14.
37	00051	001536	TMP15.
38	00052	001537	RAM00.
39	00053	001540	RAM01.
40	00054	001541	RAM02.
41	00055	001542	RAM03.
42	00056	001543	RAM04.
43	00057	001544	RAM05.
44	00060	001545	RAM06.
45	00061	001546	RAM07.
46	00062	001550	RAM09.
47	00063	001551	RAM10.
48	00064	001552	RAM11.
49	00065	001553	RAM12.
50	00066	001554	RAM13.
51	00067	001555	RAM14.
52	00070	001556	RAM15.
53	00071	001557	TMC.
54	00072	001560	A0.
55			
56	00073	001561	A1.
57	00074	001562	A2.
58	00075	001563	A3.
59	00076	001564	RWRM1.

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PULL UP #1.
 INTERACTIVE CONTROLLER'S FROM IS ENABLED.
 -534, 543, 645-697, 750-788, 1078, 1080, 1082.
 INPUT MASKED OUT.
 LSE OF VELOCITY CNTR IN ACC/DEC.
 -410, 412-447, 544, 594-644, 789-825, 1077, 1079,
 1081, 1083.
 CLK TMP.
 TEMP MUX CONTROL.
 MSB OF TEMPORARY STORAGE REG
 IN MICRO COMPUTER.
 MSB OF RAM STORAGE IN MICRO COMPUTER.
 TEMP MULTIFLEXER CONTROL.
 OUTPUT OF PROM-A. INDICATES ADDRESS OF OF
 CODE.
 R/W RAM. MC STORAGE

0006	MAIN		
00377	001565	OCRY:	885.
02 00400	001566	M:	886.
03 00401	001567	S0:	887.
04 00402	001570	S1:	888.
05 00403	001571	S2:	889.
06 00404	001572	S3:	890.
07 00405	001573	CIN:	891.
08 00406	001574	ALU00:	892.
09 00407	001575	ALU01:	893.
10 00410	001576	ALU02:	894.
11 00411	001577	ALU03:	895.
12 00412	001600	ALU04:	896.
13 00413	001601	ALU05:	897.
14 00414	001602	ALU06:	898.
15 00415	001603	ALU07:	899.
16 00416	001604	ALU08:	900.
17 00417	001605	ALU09:	901.
18 00420	001606	ALU10:	902.
19 00421	001607	ALU11:	903.
20 00422	001610	ALU12:	904.
21 00423	001611	ALU13:	905.
22 00424	001612	ALU14:	906.
23 00425	001613	ALU15:	907.
24 00426	001614	E0 E3:	908.
25 00427	001615	SRST:	909.
26 00430	001616	RDL:	910.
27 00431	001617	TRAP:	911.
28 00432	001620	NMRT:	912.
29 00433	001621	XZ:	913.
30 00434	001622	RDCO:	914.
31 00435	001623	EMPL:	915.
32 00436	001624	ARAC:	916.
33 00437	001625	PRCD:	917.
34 00440	001626	SMC:	918.
35 00441	001627	RD:	919.
36 00442	001630	PL:	920.
37 00443	001631	RSRT:	921.
38 00444	001632	DE17:	922.
39 00445	001633	RNSTP:	923.
40 00446	001634	DXPL:	924.
41 00447	001635	RNPL:	925.
42			
43 00450	001636	EXPL:	926.
44 00451	001637	INPL:	927.
45 00452	001640	RMRT:	928.
46 00453	001642	I:	930.
47 00454	001643	ST:	931.
48 00455	001644	XCLR:	932.
49 00456	001645	XX:	933.
50			
51 00457	001646	END0:	934.
52 00460	001647	XY:	935.
53			
1 00461	001650	CSRP:	936.
2 00462	001651	EJMP:	937.
3 00463	001652	MC5:	938.
57 00464	001653	RACL:	939.
58 00465	001654	RWRM0:	940.
59 00466	001655	JUMP:	941.

CARRY OUTPUT FROM ALU.
 MODE CONTROL FOR ALU. SEE TI 74181.
 OP CODE BIT FOR ALU. SEE TI 74181.
 CARRY IN. CARRY FROM PROM.
 ALU OUTPUT 00. (MSB).
 ALU OUTPUT 15. (LSB).
 EQUALITY. ALU'S OUTPUT.
 FIRST SKIP CONDITION.
 READ LATCH.
 XZ AND MRST.
 DATA CHANNEL OUT DUE TO READ.
 EXAMINE PULSE FROM FRONT PANEL.
 ADV. ROM ADDR. COUNTER.
 PROCEED.
 STOP MC.
 READ INST.
 PULSE INST.
 RESTART INST.
 DEC LDC 17 IN RAM.
 RUN-STOP.
 PULSE FROM FRONT AFTER EXAMINE PULSE.
 RUN PULSE. OCCURS WHEN SWITCHING FROM
 STOP TO RUN.
 EXAMINE PULSE.
 INTERNAL PULSE.
 RESET MC OR READ INST.
 INHIBIT STORAGE IN TEMP.
 STORE IN RAM.
 CLR XZ AND XY STORAGE.
 PULSE WHICH PUTS THE PROGRAM BACK IN LOOP
 AFTER PULSE TO IA VIA ALGORITHM.
 PULSE WHICH PUTS THE PROGRAM BACK IN LOOP
 AFTER PULSE TO IA VIA PULSE INST.
 CLOSURE PULSE.
 EFFECTIVE JUMP. JUMP INST OR CONDT. JUMP.
 ROM ADDR. COUNTER LOADED.

0007	MAIN		
1	00467	001656 DE17:	942. / DEC LOCATION 17 IN MC RAM.
2	00470	001657 SKIP:	943.
3	00471	001660 STRT:	944. / START. BEGINNING OF NEW INST. MRST OR P0.
4	00472	001661 DE:	945. / DECREMENT. MC INSTR.
5	00473	001662 W:	946. / DIRECTION OF CIRCLE.
6	00474	001663 P2:	947.
7	00475	001664 P7:	948.
8	00476	001665 P9:	949.
9	00477	001666 XS:	950. / X START.
10	00500	001667 YS:	951. / Y START.
11	00501	001670 FS:	952.
12	00502	001671 SDEC:	953. / START DECEL.
13	00503	001672 XE:	954. / X END.
14	00504	001673 YE:	955. / Y END.
15	00505	001674 CMS:	956.
16	00506	001675 CF:	957.
17	00507	001676 XS:	958. / X START.
18	00510	001677 YS:	959. / Y START.
19	00511	001700 FS:	960.
20	00512	001712 W:	970.
21	00513	001713 LXY:	971.
22	00514	001714 CXY:	972.
23	00515	001715 CA:	973.
24	00516	001716 LA:	974.
25	00517	001717 GXY:	975.
26	00520	001720 ARC:	976.
27	00521	001722 10MHZ:	978. / 10MHZ CLK.
28	00522	001753 P0:	1003. / PHASE 0.
29	00523	001754 P1:	1004.
30	00524	001755 P2:	1005.
31	00525	001756 P3:	1006.
32	00526	001757 P4:	1007.
33	00527	001758 P5:	1008.
34	00530	001761 P6:	1009.
35	00531	001762 P7:	1010.
36	00532	001763 P8:	1011.
37	00533	001764 P9:	1012. / PHASE 9.
38	00534	001765 PLL1:	1013. / PULSE LATCH (1).
39	00535	001766 DE17P:	1014. / DEC LOCATION 17 OR PULSE INSTRUCTION.
40	00536	001767 DE17L:	1015. / DEC LOCATION 17 LATCH.
41	00537	002000 RIAD:	1024. / RUN INHIBIT ACC/DEC.
42	00540	002001 DG14:	1025. / DIAG. 14.
43	00541	002002 CF:	1026. / SIGNAL FROM MC WHICH PRECEDES RAMP DWN
44			COMMAND.
45	00542	002003 ERST:	1027. / END INST OR MRST.
46	00543	002004 DG13:	1028.
47	00544	002005 SDEC:	1029. / START DECEL. COMMAND FROM MC TO ACC/DEC
48			LOGIC TO START RAMP DWN.
49	00545	002006 SAD:	1030. / START ACC/DEC LOGIC (DEC LOC 17 AND TBL).
50	00546	002007 DG15:	1031.
51	00547	002010 DN:	1032. / DWN. ACC/DEC IS RAMPING DWN.
52	00550	002011 UP:	1033.
53	00551	002012 TO:	1034. / TIMER OVERFLOW ACC/DEC LOGIC.
4	00552	002013 STPV:	1035. / STOP VELOCITY COUNTER.
5	00553	002014 ERST:	1036. / END INST OR MRST.
56	00554	002015 TSL:	1037. / TOP SPEED LIMIT. OUTPUT OF ACC/DEC LOGIC.
57	00555	002016 TICK:	1038. / ACC/DEC OUTPUT.
58	00556	002020 SLCTA:	1040. / SELECT A.
59	00557	002021 SLCTB:	1041. / SELECT B.

0008 MAIN			
1	00560	002023 CLKRS.	1043. CLK ROM STORAGE. USED TO STORE A & C PROMS
2			OUTPUT.
03	00561	002024 GR.	1044.
04	00562	002025 GXY.	1045.
05	00563	002026 RAC0.	1046. ROM ADDRESS COUNTER BIT 0 (MSB).
06	00564	002027 RAC1.	1047.
07	00565	002028 RAC2.	1048.
08	00566	002029 RAC3.	1049.
09	00567	002030 RAC4.	1050.
10	00570	002033 RAC5.	1051.
11	00571	002034 RAC6.	1052.
12	00572	002035 RAC7.	1053.
13	00573	002036 LRAC.	1054. LOAD ROM ADDR. COUNTER.
14	00574	002040 CTMP.	1056. CLK TEMP STORAGE.
15	00575	002041 PLOUT.	1057. PULSE OUT.
16	00576	002042 CSRL1.	1058. CLOSURE LATCH.
17	00577	002043 CSRL0.	1059.
18	00600	002050 NTJ.	1064. NEGATIVE TEST OR JUMP.
19	00601	002051 EQ.	1065.
20	00602	002052 CARRY.	1066.
21	00603	002053 PUS.	1067. PULL UP 9 VALID ON W.L. REV D & UP.
22	00604	002054 PU10.	1068. PULL UP 10 VALID ON W.L. REV D & UP.
23	00605	002055 PU11.	1069. PULL UP 11 VALID ON W.L. REV D & UP.
24	00606	002056 PU12.	1070. PULL UP 12 VALID ON W.L. REV D & UP.
25	00607	002057 DBL.	1071.
26	00610	002060 HALT.	1072. HALT INST. IN MICRO COMPUTER. USED FOR
27			DIAG. ONLY.
28	00611	002061 PUS.	1073.
29	00612	002062 PU6.	1074.
30	00613	002063 PU7.	1075.
31	00614	002064 PU8.	1076.
32	00615	002074 P0.	1084.
33	00616	002075 RLP0.	1085. READ LATCH AND P0. SIGNAL WHICH GEN DATA
34			CHANNEL SYNC WHEN MC NEEDS DATA.
35	00617	002076 MRF1.	1086. MRST AND PHASE 1.
36			END

	0009	MAIN	
{	A0	000372	5/54
	A1	000373	5/56
	A2	000374	5/57
	A3	000375	5/58
	ALU00	000406	6/08
	ALU01	000407	6/09
	ALU02	000410	6/10
	ALU03	000411	6/11
	ALU04	000412	6/12
	ALU05	000413	6/13
	ALU06	000414	6/14
	ALU07	000415	6/15
	ALU08	000416	6/16
	ALU09	000417	6/17
	ALU10	000420	6/18
ALU11	000421	6/19	
ALU12	000422	6/20	
ALU13	000423	6/21	
ALU14	000424	6/22	
ALU15	000425	6/23	
ARAC	000436	6/32	
ARC	000263	4/38	
ARC.	000520	7/26	
BDCHA	000147	3/01	
BINTA	000023	1/24	
{	BMSKO	000146	2/59
	BROEN	000145	2/58
C0	000321	5/11	
C1	000322	5/12	
C2	000323	5/13	
C3	000324	5/14	
C4	000325	5/15	
C5	000326	5/16	
CA	000515	7/23	
CAC00	000056	1/54	
CAC01	000057	1/55	
CAC02	000060	1/56	
CAC03	000061	1/57	
CAC04	000062	1/58	
CAC05	000063	1/59	
CAC06	000064	2/01	
CAC07	000065	2/02	
CAC08	000066	2/03	
CAC09	000067	2/04	
CAC10	000070	2/05	
CAC11	000071	2/06	
CAC12	000072	2/07	
CAC13	000073	2/08	
CAC14	000074	2/09	
CAC15	000075	2/10	
CAD	000271	4/44	
CARRY	000602	8/20	
{	CF	000506	7/16
	CF.	000541	7/43
CIB	000176	3/26	
CIDNE	000213	3/40	
CIN	000405	6/07	
CLDIR	000272	4/45	
CLKRS	000560	8/01	

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JLR	000124	2/35
CMS	000505	7/15
CNTR	000265	4/40
CNTR.	000270	4/43
CODN	000302	4/55
COMP	000277	4/51
COMP.	000307	5/01
CSRL0	000577	8/17
CSRL1	000576	8/16
CSRP.	000461	6/54
CT	000262	4/37
CTMP.	000574	8/14
CTMP.	000330	5/19
CXY	000514	7/22
DATIA	000125	2/36
DATIB	000126	2/38
DATOR	000127	2/40
DATOB	000130	2/42
DATOC	000131	2/44
DBL.	000607	8/25
DC11	000052	1/50
DC12	000053	1/51
DC13	000054	1/52
DC14	000055	1/53
DCHA.	000120	2/29
DCHO	000134	2/49
DCHR0	000166	3/16
DCHR.	000276	4/50
DCHS1	000167	3/17
DCPI	000170	3/18
DCPI.	000133	2/47
DCFO.	000144	2/57
DE17	000467	7/01
DE17L	000536	7/40
DE17P	000535	7/39
DE17.	000444	6/38
DE.	000472	7/04
DG10.	000255	4/32
DG11.	000214	3/41
DG13.	000543	7/46
DG14.	000540	7/42
DG15.	000546	7/50
DG8.	000257	4/34
DG9.	000256	4/33
DGNS.	000212	3/39
DI00	000076	2/11
DI01	000077	2/12
DI02	000100	2/13
DI03	000101	2/14
DI04	000102	2/15
DI05	000103	2/16
DI06	000104	2/17
DI07	000105	2/18
DI08	000106	2/19
DI09	000107	2/20
DI10	000110	2/21
DI11	000111	2/22
DI12	000112	2/23
DI13	000113	2/24

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DI14	000114	2/25
DI15	000115	2/26
DIDC	000173	3/22
DLMR.	000267	4/42
DN	000547	7/51
D000	000032	1/33
D001	000033	1/35
D002	000034	1/36
D003	000035	1/37
D004	000036	1/38
D005	000037	1/39
D006	000040	1/40
D007	000041	1/41
D008	000042	1/42
D009	000043	1/43
D010	000044	1/44
D011	000045	1/45
D012	000046	1/46
D013	000047	1/47
D014	000050	1/48
D015	000051	1/49
D00C	000174	3/23
D50	000135	2/50
D51	000136	2/51
D52	000137	2/52
D53	000140	2/53
D54	000141	2/54
D55	000142	2/55
DKPL.	000446	6/40
E0. E3	000426	6/24
EJMF.	000462	6/55
EMFL.	000435	6/31
END0.	000457	6/51
EOB.	000266	4/41
EQ	000601	8/19
ERST	000553	7/55
ERST.	000542	7/45
EXPL.	000450	6/43
FS	000501	7/11
FS.	000511	7/19
GA	000561	8/03
GIDC	000001	1/06
GND	000327	5/17
GODC	000000	1/05
GRST.	000151	3/03
GXY	000562	8/04
GXY.	000517	7/25
HALT.	000610	8/26
I	000453	6/46
I0MHZ	000254	4/31
I0X	000207	3/36
IABY.	000253	4/30
BA0	000203	3/32
BA1	000204	3/33
BA2	000205	3/34
ICBY	000252	4/28
ICBY.	000251	4/26
ICDT	000250	4/24
ICDT.	000247	4/22

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ICLR.	000156	3/08
ICROM	000316	5/08
IDNE0	000210	3/37
IDNE1	000216	3/44
IIR0	000164	3/14
IIR1	000026	1/27
IMSK0	000320	5/10
INPL.	000451	6/44
INTAX	000121	2/31
INTR.	000220	3/46
IOMHZ	000521	7/27
IORT	000122	2/33
IPI	000025	1/26
IFI.	000132	2/46
IFO.	000143	2/56
IRST	000152	3/04
IRST.	000153	3/05
IW	000260	4/35
JUMP	000466	6/59
LA	000516	7/24
LEAD0	000206	3/35
LRAC.	000573	8/13
LKY	000513	7/21
M	000400	6/02
MCS.	000463	6/56
MDCC	000172	3/21
MDCC.	000171	3/20
MDIA	000031	1/32
MDIA.	000160	3/10
MDIB.	000027	1/28
MDCA.	000161	3/11
MDCB.	000162	3/12
MDCC	000163	3/13
MNE	000261	4/36
MON.	000030	1/30
MRP1.	000617	8/35
MRST.	000274	4/47
MS	000264	4/39
MSKD.	000117	2/28
MTKE.	000301	4/54
NB00.	000021	1/22
NB01.	000020	1/21
NB02.	000017	1/20
NB03.	000016	1/19
NB04.	000015	1/18
NB05.	000014	1/17
NB06.	000013	1/16
NB07.	000012	1/15
NB08.	000011	1/14
NB09.	000010	1/13
NB10.	000007	1/12
NB11.	000006	1/11
NB12.	000005	1/10
NB13.	000004	1/09
NB14.	000003	1/08
NB15.	000002	1/07
NTJ.	000500	8/18
NVL.	000300	4/53
OBSY1	000223	3/49

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OCLR.	000157	3/09
OCRY	000177	6/01
ODNE1	000222	3/48
OIP1	000022	1/23
OIR0	000165	3/15
OIR1	000024	1/25
OMSKO	000304	4/57
ORST	000306	4/59
ORST.	000150	3/02
OSRT	000155	3/07
OSRT.	000154	3/06
P1	000523	7/29
P2	000474	7/06
P2.	000524	7/30
P3.	000525	7/31
P4.	000526	7/32
P5.	000527	7/33
P6.	000530	7/34
P7	000475	7/07
P7.	000531	7/35
P8.	000532	7/36
P9	000476	7/08
P9.	000533	7/37
PLL1	000534	7/38
PLOUT	000575	8/15
PL	000442	6/36
PO	000615	8/32
PQ	000522	7/28
PRCD.	000437	6/33
PU1	000312	5/04
PU10	000604	8/22
PU11	000605	8/23
PU 2	000606	8/24
PU	000313	5/05
PU	000314	5/06
PU	000315	5/07
PLC	000611	8/28
PU6	000612	8/29
PU7	000613	8/30
PU8	000614	8/31
PU9	000603	8/21
RAC0	000563	8/05
RAC1	000564	8/06
RAC2	000565	8/07
RAC3	000566	8/08
RAC4	000567	8/09
RAC5	000570	8/10
RAC6	000571	8/11
RAC7	000572	8/12
RACL.	000464	6/57
RAM00	000352	5/38
RAM01	000353	5/39
RAM02	000354	5/40
RAM03	000355	5/41
RAM04	000356	5/42
RAM05	000357	5/43
RAM06	000360	5/44
RAM07	000361	5/45
RAM09	000362	5/46

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